



# DIAMONDBACK™

## DPLS1

### Drain Panel Level Sensor/Control

## Installation Instructions

The DPLS1 Drain Pan Level Sensor / Control provides protection against drain pan overflow in Mitsubishi Electric Mr. Slim and CITY MULTI Indoor Units. The unit will sense a high condensate level in the drain pan. Should this occur the control shuts down the indoor unit before an overflow can occur. A thermistor error code will be produced should the DPLS1 activate indicating a fault which must be resolved before the unit will re-start.

This unit provides electronic overflow protection for Drain Pans in all Mr. Slim and CITY MULTI indoor units: MFZ, MS, MSY/Z, SEZ, SLZ, PCA/PCFY, PDFY, PEA/PEAD/PEFY, PKA/PKIFY, PLA, PLKA/PLFY, PMFY, and PVFY.

Meets requirements as listed alternative to secondary drain pans in all indoor unit installations covered by the International Mechanical Code and adaptations.

### DPLS1 – COMPONENTS



Control Box



Water Sensor



Splice Connector



M2 Wire Harness



P Wire Harness



M1 Wire Harness

### Work Safe, READ THIS!

**ATTENTION: FAILURE TO READ AND COMPLY WITH ALL WARNINGS, CAUTIONS AND INSTRUCTIONS PRIOR TO STARTING INSTALLATION MAY CAUSE PERSONAL INJURY AND/OR PROPERTY DAMAGE AND VOID WARRANTY.**

This device must be installed in accordance with Equipment Manufacturer's instructions and in accordance with all applicable local codes, including plumbing, drainage and electrical

The DPLS1 is powered by a twenty-year life Lithium battery, which has been factory, installed prior to shipment. This allows installation of the sensor and control to be accomplished without needing external electric power for operation. There is an audible indication of low battery condition. Should the battery ever need to be replaced at any time see the BATTERY INSTALLATION INSTRUCTIONS in this document.



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Type of Harness	Indoor Unit Models	Connector to Indoor Unit Control Board	Connector to Thermistor	Connector to Control Box
M2 Wire Harness	MS MSZ/Y MFZ	2 pin, female connector (with black heat shrink) to CN111	2 pin, male connector to: RT11 (Room Temp. Thermistor)	2 pin, male connector
P Wire Harness	PKA PCA PEA(D) PLA SEZ	2 pin, female connector to CN20	2 pin, male connector to: TH1 (Room Temp. Thermistor)	2 pin, male connector
	SLZ PKFY-P**NBMU-E PLFY-P**NCMU-E PMFY-P**NBMU-E PVFY-P**E00A PEFY-P**NMHU-E	2 pin, female connector to CN20, CN21 or CN29	2 pin, male connector to: TH1 (Room Temp. Thermistor) or TH22 (Pipe Temp. Thermistor/Liquid) or TH23 (Pipe Temp Thermistor/Gas)	
M1 Wire Harness	PLA PKA PCA PEA(D) SEZ PKFY-P**NH/ KMU-E PLFY-P**NBMU-E PCFY-P**NKMU-E PEFY-P**NMS/AU-E	4 pin, female connector to CN44	4 pin, male connector to TH2 (Pipe Temp. Thermistor/Liquid) and TH5 (Pipe Temp. Thermistor/Gas)	2 pin, male connector
	MS	4 pin, female connector to CN112	4 pin, male connector to RT12 (Coil Temp. Thermistor)	
	MSZ/Y		4 pin, male connector to RT12 (Coil Temp. Thermistor – Main) and RT13 (Coil Temp. Thermistor – Sub)	
	MFZ	4 pin, female connector to CN113	4 pin, male connector to RT15 (Coil Temp. Thermistor)	

## **INSTALLATION OF DPLS1 Drain Pan Level Sensor/Control:**

**(To ensure proper performance of product, instructions must be followed.)**

1. Disconnect (and lock-out, if required) all power to the Mr. Slim or CITY MULTI Indoor Unit at the Disconnect Switch (if installed) or at the main disconnect panel serving the indoor and/or outdoor unit.
2. Connect DPLS1 Splice Connector to the selected mating Wire Harness Connector – see wiring harness selection above. Connect the Control Box's Splice Connector to the mating connector on the Wire Harness (Fig 1).

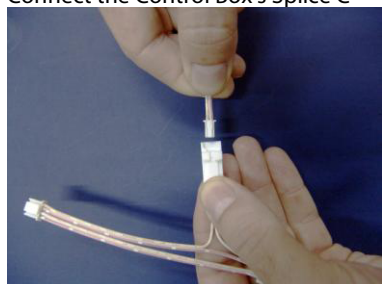


Fig 1



## Typical Installation - example: Wall Mount Indoor Unit – MS/MSY/MSZ/PKA/PKFY:

1. Remove front cover of indoor unit in order to expose the coil and the control circuit area of the unit (Fig 2). The disassembly of the front cover, air filters, and possibly electrical shields will vary according to style of indoor unit installed. See the Mitsubishi Electric's Technical Manual for detailed disassembly if necessary.

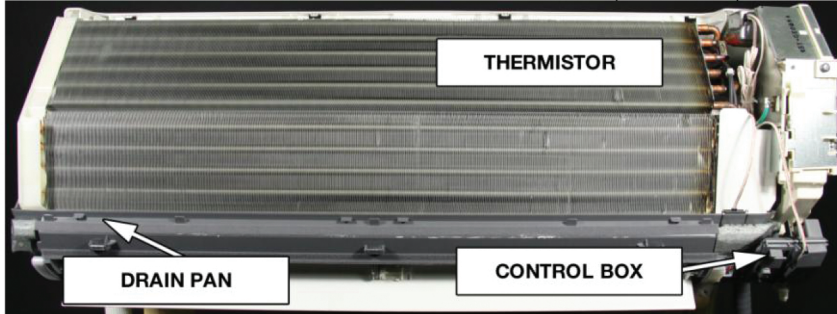


Fig 2: Typical indoor unit with cover removed

2. Locate the corresponding connector (see Table 1) on the printed control circuit board and, remove the connector of the thermistor (Fig 4). Plug female connector of the Wire Harness into the printed circuit board, and plug the male connector on the opposite end into the thermistor connector (Fig 5).

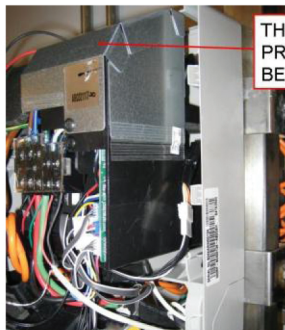


Fig 3

THERMISTOR CONNECTION TO PRINTED CIRCUIT BOARD MAY BE UNDER METAL COVER.

OR WITHIN PLASTIC HOUSING OF INDOOR UNIT FRONT CONTROL PANEL



Fig 4

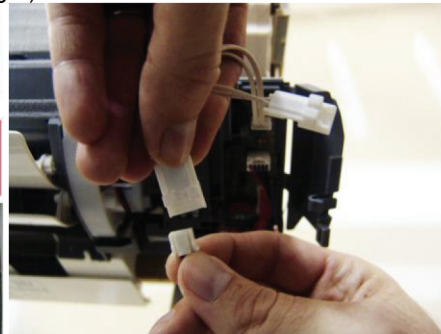


Fig 5

3. Determine the best location for the DPLS1 Control Box: Using the double-sided tape, mount the Control Box in a location inside the indoor unit that will allow clearance for the cover to be reassembled (Fig 6).

MOUNT CONTROL BOX IN AN AREA WHERE THE FRONT COVER WILL NOT INTERFERE WHEN REASSEMBLED.

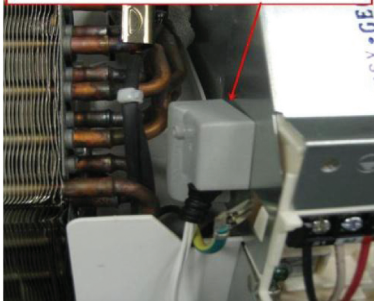


Fig 6

4. Reassemble any covers that were removed during the installation.
5. Test the DPLS1: Reconnect power to the indoor unit. Use extreme caution, the DPLS1 is a low voltage device however; do not make contact with any high voltages on the indoor unit during testing. Turn unit on and set cooling thermostat to lowest temperature setting. Make sure to restore power to the outdoor unit before performing the test in step 8.
6. Using a screwdriver or other metallic object, carefully make a connection between the two pins on the Water Sensor (Fig 7). Indoor unit should shut down after a short delay.

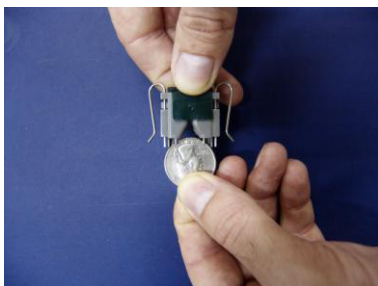


Fig 7

7. Disconnect indoor unit power before proceeding to the next step.
8. Determine the best location for the DPLS1 Water Sensor. Make sure that power has been disconnected. Find the drain pan below the coil in the indoor unit. It is located directly below the aluminum fins of the coil and is slightly wider than the coil depending on the style of indoor unit.
9. Wipe all water, dirt and dust from the drain pan with a damp cloth. **DO NOT REMOVE DOUBLE SIDED TAPE ON WATER SENSOR YET.** Temporarily locate the Water Sensor in the drain pan.
10. Rotate the panel clips on the Water Sensor so that the clips are towards the front of the indoor unit and slide onto the front edge of the drain pan (Fig 8). Push the panel clips all the way down onto the plastic drain pan then push the Water Sensor down until it stops on, or close to, the bottom of the drain trough (Fig 9)\*.



Fig 8

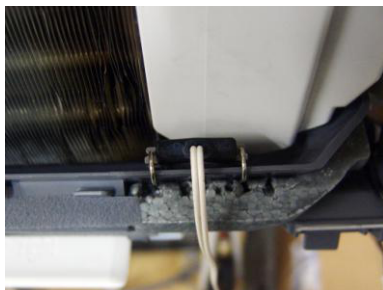


Fig 9

11. Temporarily reassemble the front cover of the indoor unit to make sure that it reattaches properly. If there is interference with the front cover, relocate the Water Sensor on the drain pan and recheck clearances.
12. Once the best location has been determined, remove the double-sided tape on the Water Sensor and reinstall it in the same manner as described above. Ensure the Water Sensor touches the bottom of the trough and the panel clips are pushed all the way down on the front edge of the trough (Fig 10).

\*These installation instructions are typical for all wall mounted, floor standing, ceiling recessed, ceiling concealed, and ceiling suspended units. Location of the water sensor should be at the drain pan no less than 3/8" from the bottom.



Fig 10

13. Bundle and tie wrap excess wire. Locate and anchor the excess wire bundles so that they do not interfere with the reassembly of the cover of the indoor unit.
14. Reassemble the indoor unit cover.
15. Turn power on to indoor unit.





## **BATTERY INSTALLATION on the DPLS1:**

1. Remove the #2 screw from the top of the DPLS1 control box (fig 11).

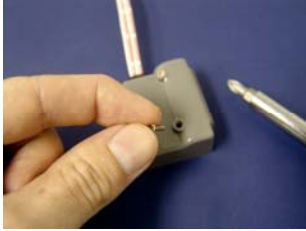


Fig 11

2. Separate the top from the base of the control box. Remove the 1/2 AA Lithium battery and replace with a new battery of identical type, making sure that battery polarity is correct (fig 12).

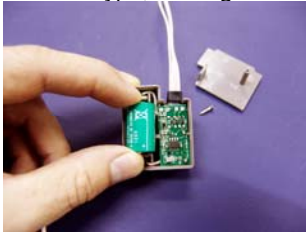


Fig 12

3. Reassemble DPLS1 top to base with screw

## **LIMITED WARRANTY**

### **Diamondback DPLS1 Drain Pan Level Sensor/Control**

1. **ONE YEAR DRAIN PAN LEVEL SENSOR/CONTROL WARRANTY - MITSUBISHI ELECTRIC & ELECTRONICS USA, INC.** (“MEUS”) warrants to the original end-user of this Drain Pan Level Sensor/Control that, should it prove defective due to improper workmanship and/or material under normal use and proper installation for a period of one year from the date of installation, we will repair or replace, at our option, any defective Drain Pan Level Sensor/Control or component without charge for the part. Replacement Drain Pan Level Sensor/Controls is warranted for the remainder of the original warranty period.
2. **THIS WARRANTY DOES NOT INCLUDE LABOR** or other costs incurred for servicing, repairing, removing, installing, shipping or handling of defective or replacement Drain Pan Level Sensor/Control.
3. **TO OBTAIN WARRANTY SERVICE**, please contact your dealer or contractor who installed this product. If your dealer or contractor needs assistance, its distributor is available for consultation. Should you not receive satisfactory warranty service, please call, fax or write to us at:

[warranty@hvac.me.com](mailto:warranty@hvac.me.com)

Mitsubishi Electric & Electronics USA, Inc.  
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Suwanee, Georgia 30024  
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4. This limited warranty applies only while the Drain Pan Level Sensor/Control remains at the site of the original installation. This limited warranty applies only if the Drain Pan Level Sensor/Control is installed and operated in accordance with the manufacturer’s instructions and in compliance with applicable local installation and building codes and good trade practices.



5. Any defective Drain Pan Level Sensor/Control to be replaced must be made available to your dealer or contractor in exchange for the replacement part. You must present proof of the original date of installation of the product in order to establish the effective date of the warranty.
6. **THIS WARRANTY DOES NOT COVER** any damage resulting or arising from: (a) installation that is not strictly according to the manufacturer's instructions; (b) incorrect mounting or locating control or sensor; (c) accident, abuse, negligence, or misuse; (d) improper wiring; (e) modification or alteration; (f) improper application of the product; (g) failure to properly maintain and service the product according to manufacturer's instructions; (h) installation or operating of the product in a manner contrary to the instructions of the manufacturer; or (i) lightning, fluctuations in electrical power or acts of God. This limited warranty also excludes all costs of installation, disconnection or dismantling the product and owner-required maintenance. Consult the instructions enclosed with the product for information regarding recommended maintenance.
7. No one is authorized to change this LIMITED WARRANTY in any respect, or to create for us any other obligation or liability in connection with this product.
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9. Some states do not allow limitations on how long an implied warranty lasts or do not allow the exclusion or limitation of incidental, special or consequential damages, so the above limitations or exclusions may not apply to you.
10. This warranty gives your specific legal rights, and you may also have other rights, which vary, from state to state.
11. This warranty is valid only in the U.S.A. and is not transferable.



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